WHAT IS CLAIMED IS:

1. A method for preparing an acicular mullite composition, the method comprising,

a) forming a mixture of one or more precursor compounds having the elements present in mullite and a property enhancing compound, the property enhancing compound containing an element selected from the group consisting of Mg, Ca, Fe, Na, K, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, B, Y, Sc, La and combination thereof.

b) shaping the mixture into a porous green shape,

c) heating the porous green shape of step (b) under an atmosphere having a fluorine containing gas and to a temperature sufficient to form a mullite composition comprised substantially of acicular mullite grains that are essentially chemically bound.

2. The method of Claim 1 wherein the precursor compounds are clay and another compound selected from the group consisting of alumina, silica, fluorotopaz, zeolite, AlF_3 and mixtures thereof.

3. The method of Claim 2 wherein the other precursor compounds are selected from the group consisting of alumina, silica, fluorotopaz, zeolite, and mixtures thereof.

4. The method of Claim 1 wherein the precursor compounds are alumina, silica and clay.

5. The method of Claim 1 wherein the fluorine containing gas is SiF_4 separately provided.

6. The method of Claim 1 wherein the property enhancing compounds is an oxide, acetate, carbonate or nitrate.

7. The method of Claim 1 wherein the property enhancing compound is talc.

8. The method of Claim 1 wherein the property enhancing compound is comprised of a first property enhancing compound having an element selected from the group consisting of Ce, B, Fe and Nd, and a second property enhancing compound having an element selected from the group consisting of Mg, Ca, Pr, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y, Sc, La and combination thereof.

9. The method of Claim 8 wherein the element of the second property enhancing compound is Mg, Ca, Y or combination thereof.

10. The method of Claim 1 wherein the element is selected from the group consisting of B, Y, Ce, Nd and combination thereof.

11. The method of Claim 1 wherein the element is Nd and Mg such that the ratio of Nd/Mg in the mullite composition is from about 0.1 to about 10 by weight.

12. The method of Claim 1 wherein the heating of step (c) is to a first temperature and then to a second higher temperature wherein fluorotopaz is formed at the first temperature and the mullite is formed at the second higher temperature.

13. The method of Claim 12 wherein the fluorotopaz formed at the first temperature is formed in an atmosphere comprised of SiF_4 separately provided.

14. The method of Claim 13 wherein the first temperature is from about 500°C to about 950°C.

15. The method of Claim 14 wherein the first temperature is at least 650°C to about 750°C.

16. The method of Claim 13 wherein the second temperature is at least about 960°C to at most about 1300°C.

17. A porous mullite composition comprised substantially of acicular mullite grains that are essentially chemically bound, wherein the mullite composition has a phase on at least a portion of the mullite grains, wherein the phase is comprised of at least one element selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, B, Y, Sc, La and combination thereof.

18. The porous mullite composition of Claim 17 wherein the element is selected from the group consisting of Ce, Nd, B, Y or combination thereof.

19. The porous mullite composition of Claim 17 wherein the composition has Nd and Mg therein and the ratio of Nd/Mg is from about 0.1 to about 10 by weight.

20. The porous mullite composition of Claim 19 wherein the ratio is about 0.2 to about 5.

21. The porous mullite composition of Claim 17 wherein the porous mullite composition has a porosity of about 50 percent to about 70 percent.

22. The porous mullite composition of Claim 17 wherein the porous mullite composition has a thermal shock factor of at least about 300°C.

23. The porous mullite composition of Claim 22 wherein the mullite composition has a thermal shock factor of at least about 400°C.

24. A diesel particulate filter comprised of the mullite composition of Claim 17.

25. The diesel particulate filter of Claim 24 wherein the mullite composition has a catalyst coating on at

least a portion of the mullite grains of the mullite composition.

26. A diesel particulate filter comprised of the mullite composition of Claim 23.

27. The diesel particulate filter of Claim 26 wherein the mullite composition has a catalyst coating on at least a portion of the mullite grains of the mullite composition.

28. A catalyst comprised of the mullite composition of Claim 17 having a catalyst coating on at least a portion of the grains of the mullite composition.

29. The catalyst of Claim 28 wherein the catalyst is an automotive catalyst for the treatment of exhaust or a catalytic combustor.

30. A mullite composition comprised substantially of acicular mullite grains that are essentially chemically bound, wherein the mullite composition is substantially devoid of broomstick mullite grains.

31. The method of Claim 1 wherein the element is Fe and Mg such that the ratio of Fe/Mg in the mullite composition is from about 0.5 to 1.5.